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THE TIGER



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To our beloved teacher,
Miss Ethel A. Benny,
is this volume
affectionately dedicated

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The Wise Man of Front

It was a weary August afternoon and Cornelius Rodes, the town marshal and district detective, was sitting with a group of country idlers on the steps of the courthouse when a well dressed man hurried up and inquired for the town marshal. Cornelius jumped to his feet as nimbly as he could for a man of his age. He was the oldest and most learned of all the five hundred inhabitants of Front.

The newcomer spoke a few hurried words to the marshal and the two started down the street toward the Rodes barn. All eyes remained on the pair until they were out of sight and then followed great discussion as to the nature of the stranger's visit.

The discussion was ended very abruptly by the reappearance of Marshal Rodes.

"Hey, boys! ye seen that feller, didn' ye? Well, he's a detective from New York and he jus' took a run down with a case fer me."

Everybody became interested.

"This here detective's the head of a secret society and they've found a criminal who's gonna be here at the county meetin' next Thursday. It's our duty to git him and all ye have to do is, do as I tell ye."

This did not meet with great approval.

"Look-a-here, Cornelius Rodes, ye better have a care what yer gettin' into. 'Member last year that case ye had with a New York sharper at the county fair."

"Now ye look out, Sam Snodgrass, how ye talk to me. I'm marshal and don't ye 'spect after that case I'd be watchin' out fer sich sharpers as they was? Ye heard what I said before. Do as I tell you."

Then warnings came from every corner until Detective Rodes fairly boiled over at their presumption in cautioning him and he left with a sharp reminder that they must be mighty careful how they spoke to him.

The plan for the attack on this unknown villain was not disclosed to anyone, not even to Detective Rodes, until the day of the meeting. That afternoon, Cornelius had made his inspection of the town and sat reading the detective deductions of Conan Doyle when a loud and hurried rap brought him to his feet so quickly that his brain whirled for an instant. As soon as he collected himself, he went cautiously to the door and peered out. Seeing no one, he listened a moment but presently the face of his friend, the detective, peered in at him. Cornelius Rodes jerked open the door. The detective stepped in very deliberately and took a chair. Cornelius closed the door and sat down.

"Now, of course, Mr. Rodes, as you have come into our circle in the trapping of this man, you must follow our plan.

"I suppose I did not tell you that there was a reward of \$3500 offered for his capture, which shall be divided equally between the seven. There are five members whom you have not met."

Cornelius' countenance beamed.

"You see our prize has made off with a large sum of money which he is carrying on him. When this meeting is half over, you are to step to the speakers' stand armed and order this person to throw up his hands. If he refuses, you must order everyone to throw up their hands and our men will search until they find him. However, as a safeguard, I think it will be wise to appoint certain of your fellow citizens to assist in case of any resistance."

Cornelius Rodes had no further opportunity to question him, as the detective left him immediately. Rodes was somewhat bewildered. When he managed to get to the door, he saw the detective with his five friends making their way towards the woods.

Marshal Rodes changed his marshal's star from his vest to his coat—an unheard-of circumstance—and started in search of his trustworthy citizens. He came upon the same group of country idlers at the courthouse.

"Whose gonna volunteer to help me ketch that feller to-night?"

There was no answer.

"Did ye hear me?"

"We ain't any of us, 'cause we know it's only a game."

"Ye better be careful, now, Army Reeslin', if you don't want to volunteer, I'll make ev'ry one of ye go."

Still no one volunteered. Thereupon, he arrested them, one and all, as a nuisance to the courthouse and marched them down in a body to the jail to await his pleasure.

The hour for the meeting came at length. Detective Rodes marched his prisoners up to the already crowded school house and made them enter. The meeting then proceeded. Just after the usual speech by Judge Perkins, Marshal Rodes arose and addressed the assembly.

"Now, I'm not up here for spealin', but it's strict business. I want the man in this audience what's got money on his person thet don't belong to him to hold up his hands."

There was not a movement in the room.

"We know who ye are, but we're givin' ye this chance."

Still everything was quiet.

"Then everybody who ain't guilty hold up your hands."

Every hand in the room went up.

"Everybody keep your hands up while my men search you," came from the back of the room. Everybody turned, to see a heavily built man standing at the door with two guns in his hands. Then the gaze quickly turned back to the stand. Here, Cornelius Rodes was carelessly waving two guns of equal size at the gathering. It was no use to resist.

The men searched each person, collecting all his money and valuables. The supposed detective slipped a note into the nearest upheld hand. The six rushed out of the door and turned the key in the lock from the outside. Those nearest the windows saw a streak of light and heard the whirr of a machine as it raced away. Cornelius Rodes then realized that he had helped in a hold-up.

When the victims had cooled down somewhat, the note was produced and read:

Front, Penn., Aug. 12, 1909.

Dear Sirs:—Your town was the easiest yet. Many thanks for the marshal's aid. Yours respectfully,

N. Y. SECRET SOCIETY.

Marshal Rodes thereupon took occasion to resign his long-standing position. He was, however, promised a pension from the town. Thus ended the career of the wise man of Front.

LILLIAN OLNEY.

Making Up Lost Time

"You're ten minutes late and you'll have to be in Schurz by eight so the Express can leave on time. Here are your orders!"

The station agent—a good-natured sort, who had the reputation of being care free and a "good fellow"—passed the orders to the engineer. This engineer had been over that same road for ten years, and was by far the most careful man on the line. They called him "Careful Jim." In all his service there had never been an accident of any kind chalked up against him.

On this particular night the wind and snow combined to form a blizzard, such as is found nowhere but in the mountainous regions of Nevada, during the winter months. The fast falling snow was slowly piling up on the rails, making it difficult, even with the powerful headlight of the locomotive, to see obstructions on the track. It was no night for fast running, especially on the old mountain road, where there were bad turns and slippery rails. In such a blinding storm danger signals could be passed unobserved.

No wonder, then, that "Careful Jim" was disturbed in mind. His orders compelled him to take a desperate chance, which, according to his views, was absolutely needless. Jim sat staring at these orders from his superintendent and wondered if this man, who was intrusted with the interests of the company, realized the significance of this message, which read, "Make Schurz by eight at any cost." He turned to the station agent and said, fiercely:

"The old fire-eater hasn't been workin' right all day, and besides, the load's too much for one engine on this grade. The 'Express' could make up a little time on level ground easier than we can. Suppose, though, I'll have to do it by eight or lose my job. It's bad business, I tell you; it's bad business; but—orders are orders."

The station agent merely shrugged his shoulders, went back to his office and sat down by the warm fire for a quiet smoke. Why should he worry? It wasn't up to him. He didn't dictate the orders, he merely delivered them.

In the meantime, the fireman had caught the signal from the conductor and passed it on to the engineer. No. 29 was off on its time-making trip down the grade. Jim threw off the brakes, sending the fast speeding train headlong through the darkness. The shrieks of the whistle, as the train passed over a road-crossing or as the engineer sighted one of the few signal poles, were barely audible above the whistling of the wind.

The engineer sat like a statue, his eyes fixed on the track before him, his hand on the air brake, ready in case of danger. Not a word was spoken between Jim and his fireman. Both had their work to perform; and even if they had wanted to talk, it is doubtful if they could have made themselves heard. The engine occasionally swayed dangerously from side to side as it hit some flaw in the track or swung around one of the numerous curves. The fireman looked at his watch; they had gained four minutes, but he was too frightened to look pleased. He received his signals for more coal with a mere nod of the head and a ready compliance. He disliked to keep such a hot fire when they were coasting, but he was under the orders of the engineer and deemed it wise to obey.

The strain was terrific, causing the axles, already too warm, to become hot. The engineer never lessened his speed. He must make Schurz by eight. Those were his orders, and orders must be obeyed. He signaled the fireman to keep a sharp lookout, as they were approaching the most dangerous curves on the road. The fireman fixed his gaze on the irregular track ahead. So did Jim.

The fireman breathed a sigh of relief as they passed safely 'round the first turn. He trembled as the great locomotive swayed, passing over the next. Jim merely cursed; he knew that there were other turns ahead, even more danger-

ous. But he never lessened the speed. On and on they went, sometimes lurching threateningly to one side and then the other. To the fireman and the alarmed crew they seemed to be going 'round and 'round, facing peril at every turn. To Jim it was only a case of taking a chance, and a desperate chance at that. Even though he had never taken such a risk before, his brain was cool and collected.

Eight minutes had been gained, all but one of the treacherous curves were passed; the snow had stopped falling—everything seemed to combine to bring Jim through, on this record-breaking trip. Still he and his fireman kept a lookout on the track.

They had passed the last curve and were on the last stretch. Both Jim and his fireman began to breathe easier. Suddenly, amid a hissing of steam and twisting of steel, No. 29 left the track and plowed through an embankment. It continued its wild dash for a hundred feet, the cars piling up into a heap of wreckage. Then it came to rest. Almost immediately the coaches caught fire as if to complete the agony of the passengers, whose groans mingled with the shrieks of the wind. The train had stopped at a signal, the signal of a broken axle and death.

"Careful Jim," with a grim smile on his face, was brought into Schurz the next morning on a stretcher. He had obeyed orders, but it cost him his life.

A. CHURCH.

Recognition

John Allen clung with mittened hand to the bucking gee-pole, and held the sled in the trail. With the other hand he rubbed his cheeks and nose. He rubbed his cheeks and nose every little while. In fact he rarely ceased from rubbing them, and sometimes as the numbness increased, he rubbed fiercely. His forehead was covered by the visor of his fur cap, the flaps of which came down over his ears. The rest of his face was protected by a thick beard, golden brown under its coating of frost.

Behind him churned a heavily laden Yukon sled, and before him toiled a string of five dogs. The rope, by which the animals dragged the sled, rubbed against the side of Allen's leg. When the dogs swung on a bend in the trail he was obliged to step over the rope. There were many bends and he was compelled to step over it very often. Sometimes he tripped on the rope, or stumbled, and at all times he was awkward. He betrayed weariness so great that the sled now and then ran upon him.

When he came upon a straight piece of trail, where the sled could get along for a moment without guidance, he let go of the gee-pole and batted his right hand sharply upon the hard wood, as he found it difficult to keep up the circulation of the blood in that hand. But, while pounding with one hand, he never ceased rubbing his cheeks and nose with the other.

"It's too cold to travel, anyway," he said. He spoke aloud, after the manner of men who are much by themselves. "Only a fool would travel at such a temperature! If it isn't eighty below it's because it is seventy-nine."

Suddenly, he yelled "Whoa!" at the dogs and stopped. He seemed to be in a wild panic over his right hand, and proceeded to hammer it furiously against the gee-pole.

He rubbed his nose not reflectively, but savagely, in order to drive the blood into it, and urged the dogs to their work again. He was traveling on the great frozen surface of the river. The frost was benumbing Allen's spirit.

He plodded with bowed head, unobservant, mechanically rubbing nose and cheeks, and batting his steering hand against the gee-pole, on the straight stretches.

But the dogs were observant, and suddenly they stopped, turning their heads and looking back at their master out of eyes that were wistful and questioning.

The man was about to urge them on when he checked himself, roused up with an effort, and looked around. The dogs had stopped beside a water hole; not a fissure, but a hole, man-made. A thick skin of new ice showed that it had not been used for some time. Allen glanced about him. The dogs were already pointing the way, each wistful and hoary muzzle turned toward the dim snow-path that left the main river trail, and climbed the bank of a small island.

"All right, you sore-footed brutes," he said, "I'll investigate. You're not a bit more anxious to quit than I am."

He climbed the bank and disappeared. The dogs eagerly awaited his return. He soon came back to them, took a hauling rope from the front of the sled, and put it around his shoulders. Then he gee'd the dogs to the right and put them to the bank on the run. It was a hard pull. They crouched low to the snow, whining with eagerness, as they struggled upward with the last ounce of effort left in their bodies. The man shouted threats and encouragement, and threw all his weight on the hauling rope.

They cleared the bank with a rush, swung to the left and dashed up to a small log cabin. It was a deserted hut consisting of a single room, eight feet by ten on the inside. Allen unharnessed the dogs, unloaded his sled, and took possession. The last chance wayfarer had left a supply of firewood. Allen set up his light sheet iron stove and started a fire. He put five sun-cured salmon into the oven to thaw out for the animals. From the water hole he filled his coffee pot and cooking pail.

While waiting for the water to boil he held his face over the stove. The moisture from his breath had collected on his beard and frozen into a mass of ice, which he proceeded to thaw out. As it melted and dropped upon the stove it sizzled and rose about him in steam.

A wild outcry from the dogs without did not take him from his task. He heard the wolfish snarling and yelping of strange dogs and the sound of voices. A knock came at the door.

"Come in," Allen called.

The door opened, and the hazy figures of a man and woman pausing on the threshold, loomed through the cloud of steam.

"Come in," he said again, "and shut the door."

Peering through the steam, he could make out but little of their personal appearance. The nose and cheek strap worn by the woman, and the trail wrappings about her head revealed only a pair of black eyes.

"I wonder if there is any other cabin around here," the man said, glancing about the unfurnished room. "We thought this cabin was empty."

"It isn't my cabin," Allen answered. "I just found it a few minutes ago. Come right in and camp. Plenty of room, and you won't need your stove."

At the sound of his voice the woman peered at him with quick curiosity. "Get your things off," her companion said to her. "I'll unhitch and get water."

Allen took the thawed salmon out and fed his dogs. When he reentered the cabin his pot of water was boiling. He threw in the coffee and took his pot from the stove.

He proceeded to take his meal from the top of his grub box. Between mouthfuls he talked trail and dogs to the man, who was thawing out the ice from his mustache.

There were two bunks in the cabin, and into one of them the stranger tossed his bed-roll. "We'll sleep here," he said, "unless you prefer this bunk; you have first choice, you know."

"That's all right," Allen answered, "one bunk is as good as the other." He spread his own bedding in the second bunk, and sat down on the edge. The stranger tossed a small physician's traveling case at one end to serve as a pillow.

"Doctor?" Allen asked.

"Yes," came the answer, "but I will assure you that I didn't come to the Klondike to practice."

The woman busied herself with the cooking, while the man sliced the bacon and fired the stove. The light in the cabin was very dim, so that John Allen could not very well make out what the woman looked like. Not that he tried. He did not seem to have any interest in her at all. But she glanced curiously from time to time into the dark corner where he sat.

"I say, Tess," said the stranger after a few minutes, "don't you think that coffee is boiled long enough?"

At the sound of the woman's name John Allen became alert, he looked at her quickly, while across his face shot a haunting expression. After a moment by an effort of will, his face became as placid as before, though he was still alert. He was dissatisfied with what the feeble light had shown him of the woman's face.

Her first act was to set the coffee pot back. It was not until then that she glanced at Allen. But he had already composed himself. She saw only a man sitting on the edge of his bunk, studying incuriously the toes of his moccasins. But as she turned to go on with the cooking he shot a swift look at her, and she, glancing back, caught his eye.

She drew a candle from the grub-box and lighted it. One look at her illumined face was enough for Allen. In the cabin the widest limit was only a matter of a few steps, and the next moment she was at his side. She deliberately held the candle close to his face, and stared at him out of eyes wide with fear of betrayal. He smiled quickly back at her.

"What are you looking for, Tess?" the doctor called.

"Hairpins," she replied, passing on and rummaging in a clothes bag on the bunk.

They served their meal on their grub-box, facing Allen, who had stretched out on his bunk. In the close quarters it was as though the three were together at a table.

"What part of the States do you come from?" Allen asked.

"San Francisco," replied the doctor, "but I've been here for two years."

"I come from California, myself," was Allen's answer.

The woman looked at him appealingly, but he only smiled.

"By the way, doctor, what is your name, if I may ask?"

"Haythorn, if you will take my word for it; I gave up cards with civilization."

"And Mrs. Haythorn," Allen smiled and bowed.

She flashed a look at him that was more anger than appeal.

Haythorn was about to ask the other's name. His mouth opened to form the question, but Allen cut him off.

"By the way, doctor, about the time I left the city the newspapers were full of the story of a member of your profession disappearing with the wife of a prominent business man there. I became quite interested in the case. It seemed that the doctor was a young fellow, but had already earned quite a reputation. I wonder if you remember him."

Haythorn nodded his head. "His name was White, I believe. I knew him somewhat, but I never met him personally."

Haythorn did not want to be questioned further on this subject. Glancing at the stove, he pulled on his cap and mittens. "I'm going out to get some wood," he said, "and then I can take off my moccasins and be comfortable."

The door slammed behind him. For a long minute there was silence. The man continued in the same position on the bed. The woman sat on the grub-box facing him.

"What are you going to do?" she asked abruptly. Allen looked at her with lazy indecision. "What do you think I ought to do?"

"But—" she began. Then clenched her hands and stopped.

"I hope you don't want me to kill Mr. er—Haythorn?" he said gently.

"But you must do something," she cried. She glanced desperately around the cabin and at the bed unrolled in the other bunk. "Night is coming on. You can't stop here. You can't. I tell you, you can't."

"Of course I can. I want to remind you of the fact that I found this cabin first. You are my guests. You can't go away because you have a dry, hacking cough; what you will have to do is to tell Mr.—Haythorn who I really am."

"You don't think I'm afraid to introduce you, do you?" she replied.

There was a fumbling on the latch, and Haythorn entered with an armful of wood and set it beside the stove.

"Mr. White, this is my husband, John Allen."

"So you're the chap. Well, well. You see I am really glad to meet you. I have been curious to know what Tess found in you; where, I may say, the attraction lay."

"I know how you must feel about me," White replied.

"Don't mention it," Allen broke in. "What I want to know is what we are going to do?"

"All three of us cannot remain in this cabin for the night; one of us must get out. It's only a ten-mile pull to the next camp. Tess can't go because she is ill, and I will not go without her."

"I found this cabin first and you are my guests," declared Allen.

"Enough of this. You can't stop here."

"Well," said Allen slowly and semi-apologetically, "I need some money."

"How much do you want?" demanded White, and his voice did not conceal the contempt that gleamed from his dark eyes.

"You've got a fat sack of dust. I saw you unload it from your sled. I should say it weighed—well—about twenty pounds. What do you say if we call it four thousand?"

"But it is all I've got, man," White cried.

"You've got her," the other said, soothingly. "Surely it is a reasonable price."

White shuffled across the floor for the gold sack, which he handed to Allen. Allen handled the sack lovingly, and with due appreciation of its preciousness carried it out to his sled. Returning he gathered his pots and pans together, packed his grub-box and rolled up his bed. When the sled was lashed and the complaining dogs harnessed, he returned to the cabin for his mittens.

"Good-by, Tess," he said, standing at the open door.

She turned on him, struggling for speech, but too frantic to word the passion that burned within her.

"Good-by, Tess," he repeated, gently.

"Beast." The word came almost inarticulate from her quivering lips.

She turned and tottered to the bunk. Flinging herself face down upon it, she sobbed: "You beasts! You beasts!"

John Allen closed the door softly behind him. As he started the dogs he looked back at the cabin. At the bottom of the bank beside the water hole he

halted his sled. He worked the sack of gold out between the lashings, and carried it to the water hole. Already a new skin of ice had formed. This he broke with his fist. Untying the knotted sack he emptied its contents into the water. The river was shallow at that point, and three feet beneath the surface he could see the bottom dull yellow in the fading light. At the sight of it he spat into the hole.

He started the dogs along the Yukon trail. Whining spiritlessly, they were reluctant to work. Clinging to the gee-pole with his right hand, and with his left rubbing his cheeks and nose, he stumbled over the ropes as the dogs swung on a bend.

"Mush on, you poor, sore-footed brutes," he cried. "That's it, mush on!"

M. KONETSKY.

The Prospector

Countless times had he been disappointed, and always had hope returned to him. But now as he was growing older, each disappointment told heavily upon him and was harder to bear.

As a young man, James Ralston had come to California—the gold country—with visions of making a great fortune. Arriving in Sacramento, he soon left for the northern part of the State, lured by tales of gold, hoping in the course of a few months to return to his eastern home, a rich man.

The months lengthened out into years and he had not even found enough gold to pay for a ticket to his home. He stayed on, always hoping, thinking to-morrow he would surely make a big strike. To-morrow would dawn, bright and joyous; then fade, gray and cheerless, leaving James Ralston still sad and dejected.

In the evening, as he sat in the doorway of his rough cabin, smacking his old pipe and gazing at the myriad stars above him, hope would come again to spur him on to new efforts. All night he would dream of finding the golden treasure.

The years passed. He was now an old man, still possessed with the one idea of some day striking it rich. His perseverance was wonderful. He sometimes uncovered a few small nuggets as he worked on his claim. These, he thought, might lead to the vein of gold he was searching for, but they would turn out to be only pockets in the rock. Work as he would, he could find no further signs of gold.

With these few findings he bought his scant provisions, often sharing them with less fortunate miners, who stopped to visit him on their way to other localities. Ralston, however, year after year remained in the same place, refusing to relinquish the hope of finding gold there.

One morning he started off as usual for his claim. It was some distance from the cabin. He lacked his customary cheerfulness—his steps dragged, and he stopped often to rest. He kept drawing his hand across his eyes as though his vision was blurred. His years of weary, unrewarded toil were telling on him. Slowly he climbed the last few yards of the trail, then stopped in amazement at the sight that met his eyes. Could he be dreaming? He rubbed his eyes. There before him was gold—gold everywhere, bright, shining, beautiful!

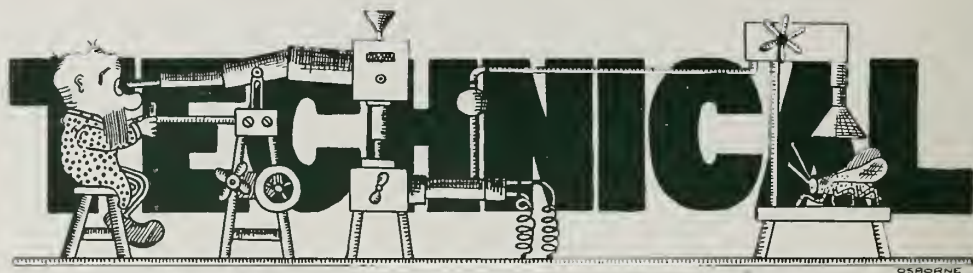
It couldn't be true! He closed his eyes. Opening them, he gazed again upon the beautiful expanse of bright color. Gold, and in such quantities—the

ground was covered with it. His dream of years was a dream no longer. It was a wonderful reality. At last he had found what he had toiled for so laboriously.

In his eagerness to grasp the treasure, he stumbled and fell; but instead of striking hard gold, his hands touched something soft. What his failing sight had mistaken for gold was the gold of the poppies. Touched by the first rays of the morning sun, they had opened wide their golden cups, covering the hillside with a golden glory. Now gently they nodded their heads about the quiet form.

ELLEN L. GIMMINI.





Celluloid

Celluloid, a hard, homogeneous substance, is a product of the action of strong nitric acid upon cellulose. Celluloid is an intimate mechanical mixture of pyroxyline, the nitrated cellulose, with camphor and is obtained by adding the pyroxyline to melted camphor; by dissolving the constituents in an appropriate solvent, usually alcohol or ether, and evaporating to dryness; or by strongly compressing the two substances together. A combination of the two latter methods is now generally adopted, i. e., partial solution under pressure.

The pyroxyline employed for the commercial celluloid is generally the tetra—or penta-nitrated cellulose, the formulae for which are $C_{12}H_{16}O_6(NO_3)_4$ and $C_{12}H_{15}O_5(NO_3)_5$ respectively. The hexa-nitrated or guncotton is rarely used on account of its explosive and inflammable qualities which must be reduced to a minimum to suit the purposes to which celluloid is employed.

The usual proportion of the constituents is two parts of pyroxyline to one of camphor. The camphor is dissolved in the least possible quantity of alcohol; the solution mixed with dry pyroxyline; the whole then subjected to strong pressure in a hot press. It is then dried by exposure to air, previously desiccated by calcium chloride or sulphuric acid. In the method generally used, the solution of camphor is sprinkled over the dry pyroxyline which is then covered with a second layer of the material and again treated with the camphor solution. This process is repeated until the requisite amount of celluloid is formed. The resulting mass of semitransparent material is then worked for some time between cold rollers and then between steam-heated rollers until the mass becomes tough and flexible. Smoothly polished rollers revolving in opposite directions are used in the process. In order that the pressure may be increased or decreased, the roller bearings are moved toward or away from the center. The gears are only loosely cut and to avoid overheating from friction, revolve in a trough of water. The central axle of each drum or roller is hollow, and connected through a steam-tight joint to the steam pipe for the purpose of heating. Everything possible is done to prevent any moving part from becoming overheated to the kindling temperature of the celluloid on account of the extremely inflammable nature of the material.

If a perfectly transparent celluloid is wanted, no coloring matter is added before rolling. For the various colored and mottled shades of celluloid, coloring compounds are introduced before the mass is rolled, thoroughly mixed and allowed to permeate throughout the plastic mass. Aniline dyes are for the most part used in the coloring of the crude material; vegetable and mineral coloring matter, however, has been used with success. The Prussian blue is one of the most commonly used of the mineral coloring compounds, producing a deep shade of blue similar to the color of cobalt glass.

The mass which gathers on the rollers is stripped off in thin sheets and rolled up like paper to fit the hydraulic press cylinder from which it is expelled in the form of tubes six to eight feet in length. For the processes of manufacture for which sheet celluloid is required, the sheets are cut from the rollers while yet thick, approximately one inch thick. They are laid one upon the

• other on an iron bed block and subjected to enormous pressure in an hydraulic press at 70° C. for from eight to twenty-four hours according to the quality. The mass after compression is found to be welded together with no apparent interstices. The now solid block of thick celluloid is placed in the micrometer cutting machine, which consists of a heavy movable bed carrying the celluloid block backwards and forwards under the cutting knife. With each forward stroke of the block a sheet is cut off, the thickness of which is controlled by an operator who calipers each sheet by hand and returns to the rollers all sheets not up to the standard either in quality or thickness.

After cutting, the sheets are slightly rough and the uncolored sheets are translucent but not transparent. Upon being subjected to hydraulic pressure between warm polished surfaces, all marks from the knife are eradicated and the sheets possess a smooth polish, capable of being buffed to a high lustre. The newly polished surfaces of the uncolored celluloid possess a degree of transparency only slightly inferior to glass.

In this state, that is in the form of sheets, the celluloid can be cut with dies to form mirror-backs, memoranda booklets, combs and an ever-increasing number of small favors and novelties; while the transparent celluloid, usually a better quality and more expensive, is made into drawing implements, triangles, French curves, railroad and ship curves, "T" squares, battery cells, fans, etc. The thinner sheets are sensitized and prepared for photographic films and pellicles. For bicycle grips, handles of any description, mechanical and swimming toys and dolls, the tubes are employed. The celluloid tubes are inserted in molds and steam pressure is employed from the inside. The pressure and heat cause the tubes to swell and take the desired shapes and impressions from the interior of the mold.

* * * * *

Of late many substitutes for celluloid have been invented and manufactured. Chief among these are the casein or "skim-milk" products. Each of these substitutes, however, seems to have its objections. Although the casein products are superior to celluloid when regarded from the point of inflammability, celluloid is much more easily cut, less liable to fracture, and can be made more nearly transparent than any of the substitutes.

It is to be hoped that such an admirable material which so readily adapts itself to the various technical branches can be rendered less susceptible to fire and made use of in the electrical branches or in localities from which it is now debarred, where fire, flame and electrical discharges must and will exist.

W. WATERMAN.

Rubber

The great valley of the river Amazon is the native home of the Hevea, the tree which supplies the finest rubber. This tree is very large when full grown, often being twelve feet in circumference. It requires a low lying, deep, rich soil and abundant moisture as well as equatorial climate. The juice from this tree, in its crude form for commercial handling, is the choicest of all rubber.

The gathering of this rubber is almost entirely done by native South American Indians. Inasmuch as this district is very unhealthy, it is impossible for any other class of laborers to do the work. It is said that even in the case of the natives, one life is paid for every ton of rubber.

A contractor leases a piece of forest from the government and sets out a

gang of laborers with tools and provisions. The tract is divided into sections, each one containing a few hundred trees. A gang is placed in charge of each section. The laborers cut footpaths through the dense jungle growths. Sometimes, when the land is overflowed, it is necessary to use flat-bottom boats.

The tapping, as the method of obtaining the rubber is called, is done with a narrow faced hatchet. A number of upward cuts are made at different points about the circumference of the tree. Below each cut a small tin cup is attached to catch the small quantity of the juice. The largest trees yield only a few pounds of the fluid. This fluid is collected in large bowls and taken into camp. There the natives pour the milky juice into flat vessels, and work it up into large balls or biscuits. A thick stick, paddle-shaped, is dipped into the liquid and then slowly rotated while held over the smoke of palm nuts. This process causes the juice to thicken, until hundreds of the thin layers have hardened into a heavy ball. These balls are called "biscuits" in the rubber trade.

The biscuits are carried to the nearest buyer's camp, to be sorted and graded, as fine, medium or coarse. From the buyer's camp the crude rubber is taken down the Amazon to deep water ports. From those points it goes by ocean freighters to the world's rubber manufacturing centers.

The rubber industry in the United States began with the discovery of the process of vulcanizing in 1840 by Charles Goodyear. Rubber had been used by the South American natives before the discovery of America. In 1823 the manufacture of rubber shoes began. Following this, mechanical goods, rubber clothing, druggists' sundries, etc., were manufactured. The making of rubber tires began in 1877 and now 3,000,000 pounds of rubber are used annually in the making of bicycle, wagon and automobile tires.

To-day the manufacture of rubber is one of the leading industries of the East. Statistics show the rapid progress of the rubber industry in the United States. There are now forty companies, with a capital of \$30,000,000 employing 10,000 men and having an annual output valued at from \$35,000,000 to \$45,000,000 making rubber mechanical goods. The entire rubber industry of the United States consumes considerably more than half of the rubber manufactured in the world.

R. OPPEL.

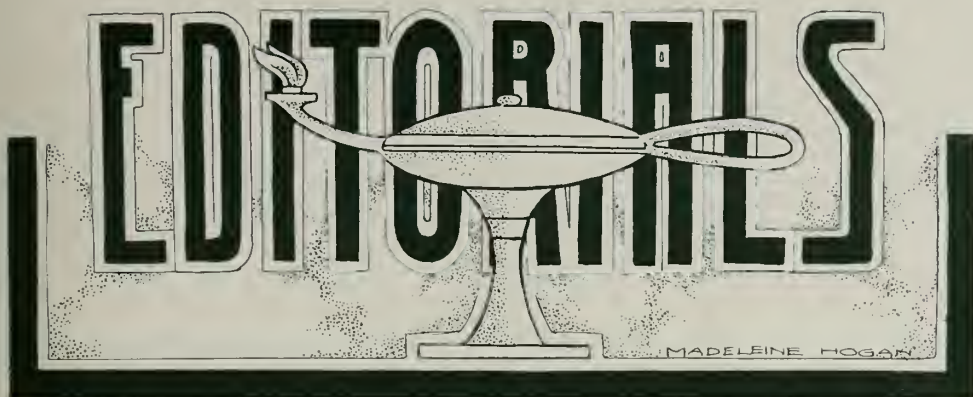




In Memoriam
James Hughes Wise
Class of 1899
Died
September 16, 1912



In Memoriam
Fred Joseph Westphal
Class of 1910
Died
July 6, 1910



THE TIGER

The Tiger is published every quarter by the Students of the California School of Mechanical Arts (founded by James Lick), at Sixteenth and Utah Streets, San Francisco, California. Subscriptions—\$1.00 per annum. Single copies, 25 cents.

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SAMUEL J. OGILVIE, '13.....	Editor
RALPH M. HEINTZ, '13.....	Business Manager

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BUTLER OSBORNE, '13.....	Art
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Well, fellows, here we are! You have heard a good deal about us and your curiosity has been held in check for quite a while. Now, go ahead and look us over. We will wait for your opinions and then fix our next paper to suit you. Criticise all you want, but please bring your remarks to us, as we are here to satisfy you, and the only way we can do this is to hear what you think of us. Go ahead, now, and pull us to pieces!

The Lux Girls

The new "Lux School of Industrial Training" has been founded by Mrs. Miranda Lux and has been made to include all the girls that formerly went to Lick. This takes away all "Our Girls," but we are permitted to hold them in trust until their building is finished. They have, however, their own teachers and their work is widely separated from that of the boys. This school will allow for a more thorough industrial training and permit a greater freedom among the girls. The work will be ably supervised by Miss Otto, and the girls will feel right at home in the new school after this year's preparation.

Sorry to have you go, girls, but we will still be neighbors for all that!

Jackson Park

A new play-ground and park has been recently dedicated near the school. This is Jackson Park. We have been very kindly granted permission to use these grounds for our athletics, provided we take care of them during our stay, as we would our own school. The superintendent has given us as much leeway as possible in all matters. It now rests with the school whether or not we will retain these privileges and show our appreciation to those who have been so good to us. Fellows, try your hardest to keep the conduct up to a standard that we will all be proud of. Let each student feel he is responsible for his own behavior on the grounds, and, although we cannot rebuke strangers, our actions will speak loud enough to let them know they are in the wrong.



During the coming year our general policy will be to exchange only with those papers that exchange with us. From time to time exceptions may be made, but we will try to adhere as closely to this rule as possible. If you find our criticisms severe do not take them in the wrong way. We are only trying to suggest improvements that are apparent to us and hope that you will do the same with our paper. Our exchanges will find that we endeavor to "give credit where credit is due."

The following is this staff's first attempt at criticism and we hope it will not be thought too harsh:

The Elm, San Mateo, Cal.—Your May issue could not be much improved. But, why do you leave out an exchange column?

Girls' High Journal, San Francisco, Cal.—The *Girls' High Journal* is published semi-annually, and deserves praise, but it cannot come up to the standard set by some exchanges that appear monthly. However, it contains much original and excellent material. "The Monument," in which an unknown emperor plans to have his name live forever, is indeed a clever story.

The Chaparral, Stanford University, Cal.—As suggestive and witty as ever!

The Searchlight, San Rafael, Cal.—Your paper on the whole is good. The joke columns exceed by far the adaptability of your cartoons.

The Wild Cat, Los Gatos, Cal.—A fly leaf and a faculty list would improve an otherwise good paper.

The Polytechnic, San Francisco, Cal.—You spoil a fine paper by lack of originality in your joke columns.

The Napanee, Napa, Cal.—To read your paper is a treat. We have, however, a few good and bad comments to make. You might add a few more cuts. Your dedication to "School Spirit" is a novel idea. The print of your "graduate quotations" should be larger.

High School Herald, Westfield, Mass.—To this staff you are a newcomer. In the paper we find much news. Your manager must be complimented for producing such an excellent sheet for five cents. May we see you at our desk often.

The Locus, Sioux Falls, South Dakota.—A few cuts and a fly leaf would improve your paper immensely. The fact that one of your students can write an excellent story as "The Ascent of Mt. Lowe" (which we in California can appreciate), leads us to believe that your paper should contain more clever stories. Your cover design is worthy of special mention.

Sequoia, Redwood City, Cal.—An exchange column and faculty list would be beneficial to the *Sequoia*.

The Herx, Woodland, Cal.—You could better your paper by having a literary heading for your stories, and less repetition in the joke columns.

The Tocsin, Santa Clara, Cal.—Yours is a well edited and highly interesting paper. Our only suggestion is that you try to introduce a better josh column.

THE TIGER.

El Gabilan, Salinas, Cal.—You are also new to us. We are very sorry to do nothing but find fault. But, why not place names under the photos and get some original joshes?

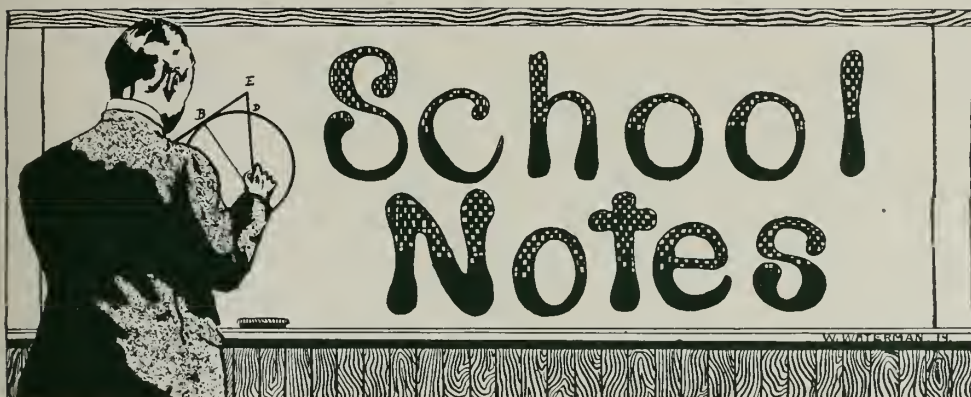
Totem, Seattle, Wash.—As clever as ever. Ads in the front of your paper undoubtedly spoil its appearance.

The Mission, San Francisco, Cal.—*The Mission* is an especially good paper from cover to cover. It is splendidly edited. The literary department as well as the others are fine and the cuts are excellent.

As THE TIGER goes to press, we acknowledge the receipt of *Visalia High School News*, Visalia, Cal.; *The Chaparral* (Fall number), Stanford University, Cal., and the *School Herald*, San Jose, Cal.



"EVERYBODY'S DOIN' IT."



The First Rally

[With apologies to the Freshman from whose note-book we stole the material.—L. G. and L. B.]

Well, sir, on Wednesday afternoon, August 26, 1912, at 2:15, all the fellows met in the hall of the main building. Some of us started for upstairs, 'cause we didn't want to miss anything, but some big, husky seniors, who called us "scrubs," shoved us aside and told us to go downstairs where we belonged. When we got downstairs another senior, "Cupid" Osgood, they called him, made us all get together and yell for '16. We didn't know why he chose sixteen instead of some other number, but we were afraid not to yell. Some of the crowd said it sounded all right, but I know my mother wouldn't like it if she thought I yelled in the school building. By this time everybody was yelling; some for '13, others for '14 and '15. Gee! they did certainly make some noise.

Then a fellow jumped out on the platform with his arms out—he looked like he was going to fly—and says: "Fellows, give 'em a Big Ali Bibo!" I was willing to give anything to get out. When he moved his arms everybody started to shout something about rat-cats, and cannibals—even some of us freshmen hollered some animal names.

When he got done, a tall, dark complected man came out and said he was glad to see us all here and hoped we were back with the old "Lick spirit." I asked "Cupid" what it meant, and he said, "Never mind, Fresh, just listen!"

Then we all give six big yells for Mr. Merrill, the principal, who came up and welcomed us back again, even though it was our first time here. He told us about the opening of Jackson Park and of our invitation to play Cogswell a game of Rugby on the opening day. We will have school half a day on Sept. 2 so we can all go down and hear the Mayor and some other men talk. He said we had Wednesday afternoon off—just think of it, Wednesday afternoon off!—but because some of the things mixed up affairs he thought that a Board of Control ought to do something to stop the disorder. Then he talked some more—Gee! I like him, too; he even wished us success in our games.

We fellows commenced to talk about Mr. Merrill, but Mr. Osgood called us down because he said we wasn't listening to La Belle, the president of our Student Body.

After he got done, Mr. Buzzo, manager of the Rugby team, came out and spoke about our "Lick spirit," but we didn't see any ghost. We were invited to play football with him and Capt. McAbee, who told us we were going to have a fine team and win the League.

Next came Manager Thorn and Capt. Mangelsdorf of the track team. They told us of the poor condition of the team and asked for help.

Somebody said something about a tiger man comin', but all we could see was Editor Ogilvie. He spoke very nice and asked us not to knock the Tiger, but boost him. I told "Cupid" if I saw a tiger running around loose, I'd boost him all right. Then Manager Heintz said we should strike somebody for an ad, it didn't matter who, so I punched the fellow next to me, but didn't get no ad, 'cause Miss Otto looked at me. He offered us a prize to get the most ads, so I made up my mind I'd tell ma not to pay the butcher till he gave me a ad.

Capt. Schwarzenbeck of the basketball team told us to come out for the team and to help Manager Vel all we could.

"English" Kidder, manager of a clean sport, introduced (I learned that from "Windy") Capt. "Fairy" Iddings of the swimming team, who told us to be sure and swim in the interclass so we would have a chance for the big team.

Wagener, manager of the orchestra (that was one on me) asked us to blow ourselves by joining the noisy crowd. Gee! I wished ma had let me have a horn; I'll bet I'd be leader of the thing.

Miss Leona Goodman told us we should consider ourselves lucky to have the Lux girls with us, because next term they are going to leave. I sure am glad they are a good looking crowd, especially some of those senior girls.

"Demon" Devine, president of the L. D. S. (I suppose that is the "Lucky Demon Society" or something of the sort) said we should learn to act and debate and to join the club, because they're going to give some times this year.

Then came a fellow they announced as "Windy" Boruck. I didn't notice a draught until he started to talk, and then a couple of fellows standing near me sneezed. He told us to support our class in debating and try to make the big team. I took out my note book to write my fourth invitation, which was to come to the final debate which is going to be held on Saturday evening, Oct. 19, 1912.

A timid little girl came on the stage, by the name of Miss Hauerken. She appeared sort of fussed but we soon gathered what she wanted to say, and that was about the Girls' Pastime Club and a jinx. I wonder what the girls want with a jinx. I'd rather have a horse with me.

The bunch began to yell "Block," and just when we started to block the hallway a fellow came pushing through our crowd and went up on the platform. All he had to say was to spend six bits and go to the Alumni boat ride.

Miss Worthen said something about the girls going out to Sutro's swimming and we fellows thought, here's a chance where we can see what sports the Lick girls are. I liked her, too; she even offered to teach me how to swim.

"Hire A" Hall was shouted and to our surprise a meek looking chap appeared. He spoke about the Camera Club and the mysteries of the dark-room. Ah, at last we had found the Lick spirit—and when they called for a Brackety-Ax we freshmen yelled with all our might.

Gee! that rally was great and I hope they have another one, because I'd like my mother to see a *real* Lick rally, and *real* Lick spirit.

Senior Class

Under the leadership of President Franz Nybye, the Thirteen class has been successfully launched on its Senior year. It has definitely settled all such important matters as dues and the electing of competent activity managers. As football manager, Mr. Butler has fulfilled the duties of his office to the best of his ability. In Mr. Sherling we have a man fully capable of handling class track affairs. Mr. Duckel and Mr. Winter are endeavoring to bring the interclass baseball and basketball laurels to Thirteen. Mr. Osgood, as manager of the debating team, will manage the interclass. Miss Leona Goodman, the manager of the girls' basketball team, is confident that the Thirteen girls will win honors in the interclass. Under such a capable and enthusiastic staff of promoters, Thirteen will certainly come out on top. Although a great deal of material has been developed in the athletic field and activities, the executive ability of the class has displayed itself in such people as Messrs. Sherling and Pilli and Miss Leona Goodman, who are the representatives on the Board of Control. In Vice-President McAbee we have a man of ability who is always willing to help at the critical moment. Miss Eleanor Hauerken deserves special mention because of the steady and efficient work done by her as secretary of the Thirteen class in the Junior year and of her willingness to continue in this position throughout her Senior year. Alexander High promises to swell the class coffers and bring the class treasury up to the standard.

With this promising condition of affairs, the '13 class sees before it a prosperous and successful conclusion to its career.

Junior Class

F. Walker and S. Richardson, president and vice-president, respectively, of the Fourteen class, are anticipating an exciting Junior year. The class has hopes of giving many social affairs. Miss Burns as secretary, and G. McLachlan as treasurer, have consented to lend their assistance to all class doings. Miss Lightbody, W. Waterman and G. Hardy are very active members on the Board of Control, and will keep the '14 class out of all difficulties. As yet, the various managers have not been elected, but Mr. Kolb of the swimming team and E. Holmes of the football team will try to bring their class to victory.

Sophomore Class

The Nineteen Fifteen class has successfully passed through its Freshman year and is now under the sway of very capable and promising officers. With R. Sneath as president and Miss Olney as vice-president, great success is assured. R. Appel has, so far, proved himself to be a suitable person for the position of secretary, and F. Wagener surely knows how to collect dues. The representatives on the Board of Control are Miss Jeans, E. Fox and E. Janssen. Mr. De Guere, manager of the football team; Mr. Frank, manager of track; Mr. Smith, manager of basketball, and Mr. Merrill, manager of swimming, are all promising athletes and know the ins and outs of the various sports. A successful Sophomore year is certainly looked forward to by all.

Freshman Class

The Freshman class was organized on August 28, 1912, by members of the upper classes. With "Senior" Mr. Wills as President, "Junior" Hess as Vice-President and Miss Jeans as Secretary, there is no doubt that this class has been started successfully. The class will soon have the responsibility of running its own affairs, as the end of the quarter is near at hand. So far, little can be seen of the spirit of this class, but this will be soon tested by their support of our teams at the games.

Lick Debating Society

Under the capable management of T. Devine, '13, President; Miss Hogan, '14, Vice-President; Miss Lighthbody, '14, Secretary, and Blade, '14, Treasurer, the Lick Debating Society has a very promising year before it. Several plays and dances have been planned by the Society, but as yet the dates remain unsettled.

The Interclass Debating Committee, Boruck, '13 (chairman), Osgood, '13, and Hardy, '14, certainly need to be commended on the excellent manner in which their contests have been scheduled and managed. The final debate is due to take place on Saturday evening, October 19, 1912, and Chairman Boruck promises a big surprise for that night. So don't forget to be there and enjoy yourself.

The dramatic department has obtained permission from the Board of Control to stage the annual Football Show. It is practically decided by the committee to give a two-act farce-comedy, entitled "Mr. Bob." This will be followed by an informal dance. Boost the Football Show. Not only will it be a courtesy to the L. D. S., but it will encourage our team and make them winners.

The Hiking Club

The Hiking Club does not need to be commended upon its excellent work. The good times that the members enjoy on their various walks more than repay them for their time and effort. Messrs. J. N. Frank, Ansel Hall and several other hiking enthusiasts, not to forget Mr. Tibbetts, who has lent his efforts whenever needed, have made the club a permanent and recognized activity of this school. Besides being splendid exercise, the trips often afford delightful scenery, which could not otherwise be appreciated. The pictures taken on these walks substantiate this statement, and also the one that a good time is always assured.

It seems too bad that the proposed three-day hike to Mt. Diablo, on September 7-8-9, had to be postponed; but never mind, boys, better luck next time. "The Tiger" wishes you the best of success for the coming year.

The Lick Orchestra

One of the most promising student activities for the coming year is the Lick Orchestra. Through the untiring efforts of Manager Wagener, the Orchestra has been practicing conscientiously, and their first public appearance, Wednesday, October 2, 1912, at the Rally showed that their time had been well spent.

The members of the Orchestra, who deserve credit for the standard of the organization that they have established, are: Kohlmoos (leader); Piccirillo and Kottenger, first violins; Crowell and Soher, second violins; Wagener (manager) and Pasch, cornets; Bradley, clarinet; Bennett, piano.

California

The Lick boys at California this semester represent each class since '08.

"Curley" Cortelyou, '08, is now a senior, a captain in the cadet regiment and assistant to trainer Voltz of the football team.

"Spid" Lutz, '09, and Frank Delano, '09, are also seniors and captains in the cadet regiment.

"Bill" Ashley, '09, and Willard Beatty, '09, are first lieutenants in the regiment. They each wear a senior sombrero.

"Vic" Lenzen, '09, has distinguished himself as a student and was elected to Phi Beta Kappa, the national honor society for scholars.

Haker, '10, is an entering freshman in one of the engineering colleges.

Oscar Sommer, '10, is in college again this year, but just at present he has gone to Honolulu to row with the Alameda Boat Club.

Bruce Barkis, '10, is registered as a sophomore in one of the engineering colleges.

Sherman White, '10, one-time manager of THE TIGER, is a senior in the College of Dentistry at the Affiliated Colleges.

Fred Hornick, '10, has left college and holds a position in a broker's office in San Francisco.

Herman Henderson, '10, is back in college again. Herm has become quite a salesman—he sold aluminum all summer and says he feels confident he could sell "Chief" Dixon a wooden leg if he got a liberal commission.

Hirschler, Watkins, House, all of the '11 class, are corporals this semester and take delight in drilling the freshman. The privilege of marching in command of seven freshmen and shouting "hep—hep" "1-2—1-2," seems to be highly prized.

Allan Rankin, '10, is also able to exercise this much coveted right under Capt. Jaenicke, '08.

Paul Wetmore, '11, and Lester Rankin, '11, are registered again this fall; they are on the football squad.

"Rube" Hills, '11, is registered in the College of Commerce.

From the class of 1912, Louis Brumel and Herman Fox are registered in the College of Mining; Page Austin, Al Maynard and Wood Young in the College of Mechanics; Milton Heilfronn in Architecture; John Newhaus in Agriculture, and Catherine Boyle in Social Science.

We are sorry to announce that no word has been received from Stanford for this issue. Arthur Wynne is probably working hard to get the fellows under his pen, but he has not been successful as yet. We hope, however, to make up for this next time.



The Lux Girls

Lux Girls' Teas

If one goes to the bungalow on any Thursday afternoon they will see a large body of girls gathered round and chatting happily. This is a "Lux Girls' Afternoon Tea." A girl is appointed from each class to act as hostess. This will give the girls a training that is sometimes missing in a school girl. Since the Lux faculty wish their girls to stand high in the minds of the outside world, the girls will endeavor to have a bit of formality at the teas.

Little extra dainties are often served and pleasant surprises are the result. These teas bring the girls together socially.

Girls' Jinks

On Wednesday afternoon, August the twenty-eighth, a jinks was held in the barn, by the Lux girls. Each class was represented by a stunt in odd fashions. This certainly caused a bit of curiosity among the Lick fellows.

The Freshmen won the honors from the Seniors for their spirit and talent. The Seniors produced "Pyramus and Thisbe," from "A Midsummer Night's Dream." The Juniors had a parody on "Chanticleer." "Ali Bebo and the Forty Thieves" in pantomime was produced by the Sophomores and the Freshmen gave "This is the House that Jack Built."

This affair was a great success and another one is looked forward to in the near future.

Folk Dancing

Gymnasium and folk dancing hold forth in "Our Barn." Under the supervision of Miss Worthen the girls are learning to be more graceful.

The dances learned are characteristic of the different nations. The costumes prevailing in the corresponding countries are being used to aid the girls. It is planned that the girls will give the students and patrons an idea of the customs and spirit of the various countries on Exhibition Day, and show their ability as dancers.



Mechanical Drawing

The Freshmen are investigating the mysteries of elementary drafting this year under Miss Boulware. They have finished their first line plate, their plate on circles, and are now completing the lettering exercise. The Sophomores are progressing rapidly, and the majority have finished their plate on orthographic projections. The Junior apprentices are numerous this year and all are doing well. Most of them have finished their sheet on screw fastenings and are now working on the riveted joints sheet. There are also five or six Seniors taking Junior drawing this year that were not in this department last year.

The Senior apprentices are up to their usual standard and are steadily forging ahead. Cate has finished the designs of "Mechanic's Models" for Mr. Plumb and is now drawing a "Page Impact Testing Machine" for Mr. Tibbetts. Buzzo has also been busy on some "Mechanic's Models," but is now working on the designs of a 5-h.p. Diesel engine. Benson has completed the plans for a rock-crusher and is assisting McAbee in drawing a 30-h.p. marine engine for Mr. Sunkel. McAbee has completed the drawing of a new foundry-box for Mr. Lacoste. Treat has done some fine work on the designs of a triplex oil pump for the boiler-room. Schwarz is drawing a ½-h.p. electric motor. Butler is enlarging the drawing of a Scotch marine boiler. Nybye is working on an abrasion machine for Mr. Tibbetts and Olney has completed a traveling crane for the foundry. Piepenbrink is doing some good drawing on a rod-bending machine.

Besides the lists of drawings already mentioned there has been a large number of outside jobs completed. These embrace the designs of trusses, arches, etc. All classes have gotten well started and the work is up to past standards.

Pattern Shop

The Freshmen are learning all the essentials of pattern making this quarter. How to grind, sharpen, and use a knife; the care and use of the square, marking-gauge, etc., has been successfully instilled into their youthful minds by Mr. McLeran. This knowledge gives them a good foundation for their future work in the construction of patterns. A few are on elementary lathe work, even at this early period.

The shop can boast of but one apprentice, Roth, who has been busy making movable drawing shelves for the Freehand Department.

Mr. McLeran is very much pleased with the time-card system which he has installed in his domicile. Through its use no Freshman can get that "tired feeling" for any length of time without being informed of the fact. It is also useful in keeping an account of the work turned out.

Foundry

The novices in this shop have had their first taste of molten iron and the experience seems to have increased their abilities. Now that their small iron blocks are safely put aside, they are finding real trouble in the form of casting fly-wheels and gas-engine molds. As yet, Mr. Lacoste has no apprentices in his department and devotes all his time to the underclassmen.

Forge

The stage of pounding cold iron has safely passed and the muscles of the Sophomores are increasing in size. The classes are progressing rapidly with their exercises and Mr. Mathis states he is very much pleased with the prospects of his charges.

Of the Senior apprentices in this department, Hess has been working on a crank shaft for the vacuum pump and is now making eyebolts for the same. Hacke takes pride in a shovel which he constructed for the Stauffer Chemical Company, and also a sledge hammer which he uses industriously in his own shop. He has also constructed parts of wood-working vises for Mr. McLeran. Coleman, the shop messenger, has been repairing tools around the shop when he finds time. Winter takes his turn at odd jobs with the rest of his contemporaries.

Machine Shop

The "click-click" of cold-chisels on cast-iron is heard no more and the Juniors are thankful. All the classes have progressed rapidly and a large number are already on their hack-saws.

The Junior apprentices—Bissett, A. Hansen, Newman, Graves, Ransdall and Hagensen—are well advanced on their elementary exercises.

Wayman and Friend, Senior apprentices, have finished the vacuum pump, which was the cause of so much worry last year, and are now working on a gas engine and its parts. Frier and Hess are proud of the steam hoist which now lies completed in the shop. Frier also has spent some time on a crank shaft for the same engine. Kirkwood has done considerable lathe work and Cannon is kept busy on odd jobs and making bolts for the gas engine. Wayman has been working on a shaper and H. Hansen is working on a turbine bearing. Pasch, the shop cut-up, condescends to do odd jobs now and then.

"Chief" Dixon reports the addition of a new switchboard to his sanctum—the engine-room. This greatly improves the appearance of Mr. Dixon's stronghold.

Chemistry Notes

The second year classes are well along in their work of elementary chemistry, having become accustomed to the use of laboratory appliances.

Blade, Langlois and Kolb are the Junior apprentices. "The little three" are well along in Qualitative Analysis and are following the example set by the Seniors, of doing their work quickly and well. They have also mastered the art of hauling distilled water.

Heintz, Idding, Thorn and LaBelle are the Senior apprentices and are now ready for anything in their line. "The big four" have analyzed samples of apatite, brazing alloys, plastic bronze, Venetian red paint stock, kaolin, or fire clay, and coke from the foundry, and are now busy doing soil analysis. Water analysis and testing cement to be used in the Lux School building will be next in line.

The apprentices have been on two interesting and instructive trips this year, conducted by Mr. Tibbetts. One was to the California Ink Works in West Berkeley, and the other to the Cowell Portland Cement Company near Mt. Diablo. On both trips the apprentices were given a thorough explanation of all details. This showed them the practical application of chemistry as well as the theoretical side.

California School of Mechanical Arts Chemistry Apprentices' Scientific Research Society

This society is the most exclusive in the school. Membership is granted only to those scientific master minds in the chemistry department. The Chief Mogul is the Rev. LaBelle, whose great theoretical and psychological theories have startled the world. His performances have, however, been greatly overshadowed by the work of the aborigine, Professor Theodore Roosevelt Chow-chow Heintz, who was captured in the wilds of the uncivilized hamlet of Berkeley by the renowned Socialist, Hon. Buck Thorn. Hon. Buck succeeded in the capture of this rare specimen by luring him along a trail of olives and deer-meat, to a pit-fall, where he was easily captured and subsequently tamed. The aborigine showed great ability by proving the theory of Prof. Katuyie Fussessingates that litmus paper could be crystallized from a heterogeneous, monomologic, acetatical solution. His next work was to prove the existence of a fourth dimension which he did. He followed this by an experiment on paradimethylanalineneagobenzonesulphoric acid. He has not finished this experiment but thinks that the acid is formed by the addition of nitrogenous, hydroscopic, ammoniacal, para-nitramline to a solution of hydrosulphuric, hydrated, silicious, beta-naphthol dryandra cordata or elococco verrueocc. The professor has also risked his life by working with high explosives, but this work was suppressed. The world famous Professor Fishy Iddings will in the near future publish a book on the work of the aborigine, the publication of which the whole world is looking forward to with great interest.

Cooking

The Junior girls have been successfully launched on their cooking career. They began the year by making cream soup and coffee for the teachers' lunch table. They are now busily engaged in canning fruits. The making of jellies

and preserves will follow. While the girls are doing this work they take notes on bacteriology. This is done to impress upon them the value of sanitation.

There is quite a large normal class this year and their work is similar to that of the Juniors, except that they do theirs from a more theoretical standpoint. They are required to find the caloric value of foods, and they also study combinations of food products. Later, Miss Hyde will give them a chance to show their ability as teachers.

Sewing

The work in the sewing department is well under way. The Freshman girls are working on their practice books, which teach them the different stitches and the way of putting things together. They learn how to patch, sew on buttons, make button-holes, and darn stockings. Aside from their regular quarter's work, they are making aprons for the boys in the shops.

The Sophomore girls are working on their practice waists. In making these they learn all the things necessary for the drafting of the patterns for their winter dresses. These girls are also making blouses for the boys.

The Juniors have started the making of infant sets. All work on these sets is done by hand, and a rivalry exists between the girls as to who will do the best work. They are required to do a great deal of embroidering while making these sets. The designs are mostly original.

The Senior girls are working on their practice tailor suits. They make both skirt and waist on the same plan as that which they will later use for their own suits.

Millinery

This year for the first time millinery is being carried on as a separate department. Miss Williams is at the head of this work. A fashion show, held on September 5th, introduced this branch to the lay members of the school.

The Sophomore model hats, designed and constructed by the girls, were the feature of the day. Those enrolled in the course are now beginning to work on their winter hats.

Watch for them!

The Home Course

The Home Course of the Lux School of Industrial Training, besides affording a thorough course in freehand drawing, and the designing, furnishing and decorating of the home, gives the girls a splendid opportunity to learn to be good housekeepers.

The Freshman girls, in addition to their regular work in prospective, have made designs for a set of under-garments which they are making in the sewing department. They have learned one freehand alphabet, which is being used in making covers for their notes in botany and in printing titles.


The Sophomore class is so large this year that it has been divided into two sections, which meet on alternate days. On Friday morning the two

sections meet as one class, to study the history and development of the home. The girls have sketched original designs for buckram hats and for the wool dresses which they are going to make in sewing. They visited the Fashion Show on September 7th and made some creditable memory sketches of gowns and hats they saw.

The Junior girls have done the poster work for all the girls' activities and announcement cards for afternoon teas at the Bungalow. At present they are busily engaged in doing place-cards for the Thanksgiving luncheon. The course in pose drawing will be found of great assistance in the coming work of costume-designing. Folk dancing has made a hit with the Juniors, as well as affording good material for pose drawing.

The work of the Senior girls during the first quarter has consisted of lectures and research work on the history of the house and types of modern dwellings. They are now ready to begin work on the plans of a comfortable bungalow. In connection with their study of the home life of primitive man, the class visited the Museum of Anthropology at the Affiliated Colleges, where the exhibit of the cliff dwellers' homes was of special interest. They were also interested in Ishi's methods of house building and fire-making.

KEEP THIS ON YOUR MIND.



THEATRE PARTY
 given by
Alumni Ass'n., C. S. M. A.
 Friday Evening, November 8th, 1912
ALCAZAR THEATRE
 (Buy Tickets from members and students, not at
 box-office.)



Football

Once more we turn to the game in which Lick has always excelled, the game of football. Every afternoon two full teams are out for practice, faithfully preparing to meet our old opponents again.

The call for candidates was not given throughout the school, as is generally the case, but the interclass games have been held in advance of the regular practice season. In this manner, Capt. McAbee can see how each man actually plays the game.

The material at present looks favorable. From last year's team are three men, Capt. McAbee, Stallman and Duckel. Among the other seniors that are out for practice are Butler, Coleman, Hacke, Junker, Sherling, Thorn and Winter. Of the juniors there are Bowes, Gaustad, Holmes, Keith, McLachlan, Smith, Walker and Webster. From the sophomore class Pengelly and Mehrrens look favorable. Muth and Johnson are the freshmen candidates for the team.

Although Capt. McAbee and Manager Buzzo have used every effort to secure a coach, they have been unsuccessful in locating one. The new men have learned the game admirably without the aid of a coach, and a very short coaching season will fully prepare the team for the League.

Our League series opens on Oct. 12 with a game against Cogswell. The following is our schedule:

October 12th—Lick vs. Cogswell.

October 19th—Lick vs. St. Ignatius.

October 26th—Lick vs. Lowell.

November 2nd—Lick vs. Mission.

Before these games a practice season has been arranged, the schedule of which contains most of the schools in our locality. Several of these games have been played, and the team has already shown that fight which makes a Lick team.

Lick 3, Cogswell 3

On Labor Day, the first game was played against Cogswell as an exhibition, to open the new Jackson Playground. The game started with the ball well into Cogswell territory, but before the end of the half, the

lack of condition of the Lick forwards allowed Cogswell to score a try. The half ended with Cogswell 3, Lick 0.

In the second half, the Lick team was determined to win and in the early part of the half the backs put the ball over the line. The try was made by McLachlan, a new man in Lick athletics.

From this point until the end of the game, the ball zig-zagged back and forth across the center of the field, neither side being able to score. The game ended with the ball in Cogswell territory. Score, Lick 3, Cogswell 3.

Palo Alto 21, Lick 0

On Saturday, Sept. 7, the team played Palo Alto High School on Stanford Field. Lick was not a match for the fast, experienced Palo Alto team, and the peninsular backs made long gains, by means of their excellent passing. Both sides played a clean, fast game.

Hitchcock 11, Lick 5

On Sept. 14, a game was played with Hitchcock Military Academy, at San Rafael. In this contest the true Lick fight was shown from start to finish. The Lick team held the ball well down toward their goal until the middle of the first half, when Hitchcock, by means of her forwards, advanced the ball to the goal line and scored a try. This was converted. In the second half, the ball went far into Lick territory, and Hitchcock scored two tries. After this point, Lick had things much its own way, holding Hitchcock within her territory and scoring five points, Capt. McAbee scoring a try and converting it.

Lick 11, Manzanita 3

Lick completely outclassed the playing of Manzanita Hall at Stanford field on Saturday, Sept. 21, and won their first game.

The "Tigers" fought from the first whistle until the last. As soon as the game was started, the ball went to the Manzanita five-yard line, but the forwards of that team, by successive rushes, scored a try.

Lick showed her old fight in the second half, and in the middle of that time scored the first try; Holmes running one-half the length of the field in scoring. The second score resulted from a long run made by Capt. McAbee, who passed to Mehrrens, the latter carrying the ball over the line. At the end of playing time, Lick scored again. This time Keith received the ball near the five-yard line and went over for a try. Although the ball lay very near the touch line and the angle was a very difficult one, Capt. McAbee converted, making the final score 11-3.

The Interclass Series

Semi-Finals—In order to pick the football material from the under-classes, the interclass was held at an early date. There were two games played: '13 vs. '16 and '14 vs. '15. The winners of these games played for the championship of the Interclass.

In the semi finals, the freshmen were hardly a match for the seniors, but showed plenty of fight, although the final score was 35-0 against them.

The junior-sophomore game was somewhat similar. The juniors won the game by a score of 11-0.

In both of these games, however, several men were found that are now showing up very well in practice.

Finals—The senior football team became champions of the Interclass by defeating the junior team by the score 11-0.

The teams were more evenly matched than the score would indicate, although the junior team had lost a few of its players and was weaker than it had been in the previous Interclass game.

The first try was made by Coleman, who scored after running from the center of the field with the ball. This try was converted. In the second half, Stallman put the ball over the line after a successful passing rush of the senior backfield. Capt. Hacke scored the third try after several successive passes made by senior backs.

Throughout the game the ball was played in junior territory for the greater part of the time, although at times the seniors fought hard to keep the juniors from scoring.

The senior team line-up is as follows:

Forwards—Hacke (Capt.), Frier, Thorn, Benson, Buzzo, Butler, Hall, Stone.

Half Back—McAbee.

First Five Eighths—Stallman.

Second Five Eighths—Duckel.

Three Quarters—Sherling.

Right Wing—Winter.

Left Wing—Coleman.

Full Back—Junker.

Wing Forward—Nissen.

Swimming

Although Lick lost some good swimmers last year, the prospects this year are very bright. The Interclass, which was held at Lurline Baths on Sept. 18, brought out some new material. Capt. Iddings and Manager Kidder are very well pleased and hope for a winning team.

The results of the Interclass were:

50 yards—Hulling, '14, first; Bates, '14, second; Fox, '15, third. Time, 29:0 seconds.

100 yards—Hulling, '14, first; Fox, '15, second; Bates, '14, third. Time, 1:54.

220 yards—Fox, '15, first; Dewing, '15, second; Harris, '15, third. Time, 4:45.

440 yards—Merrill, '15, first; Kolb, '14, second; Levy, '15, third. Time, 7:18.3.

880 yards—Asher, '15, first; Weyl, '14, second; Heintz, '13, third.

Relay—Juniors, first; Seniors, second; Sophomores, third.

The winning relay team was composed of Bates, Adams, Weyl, Kolb, Wolongwicz and Hulling.

The big team men were barred from entering the Interclass.

The Senior-Faculty Baseball Game



It was on May 22, of this year, that the Senior All Star baseball team, after a hard five weeks' training season, were defeated, as they had been for the past four years, at the hands of their old rival, our mighty faculty!

The game was exciting from start to finish. The faculty began in the first inning and took the lead of 2 to 1. Due to the superior pitching of Mr. La Coste, the excellent fielding of the entire faculty team, and the batting of our own Mr. Merrill, the faculty retained a lead until the fifth. It was in this inning that the seniors found our husky foundryman, whose place was quickly taken by Mr. Plumb, captain of the faculty, who finished the inning, allowing the seniors but a one-run lead.

The tactics of inside baseball became very popular with both teams. In the sixth, the heavy-hitting faculty very successfully sacrificed a man from second to third. This man came home on a squeeze play. The seniors tried to imitate this high-class work but made nothing more than an imitation. A sacrifice was attempted with a man on second. The latter hit a long, hard drive to left field, but Chief Dixon had left his engine and was in that field, and it was death to that fly. More than that—his lightning throw to second doubled the man that held that base and saved the faculty! Both teams put up a clever exhibition of the game in the remaining innings, but the faculty were still ahead when the game ended. Score—Faculty 20, Senior All Stars 19.

A special attraction at this game were the umpires. These duties were performed by Misses Beegeer and Boulware, members of our faculty, who have very bright futures ahead as umpires in our big leagues.

Basketball

The first basketball meeting of the year was held and turned out to be a huge success. About fifteen candidates signed up. This is a very good showing as the season is still far off and football is now holding the attention of the school.

Last year's team was composed of '12 men; therefore, an entirely new

team must be built up. We have, however, plenty of good material in the school and this will not be such a hard task. Light practise will start immediately, at Jackson Park. This practise will increase as the season approaches. Later, practise will be held on an indoor court which will be decided upon in the near future. Through the efforts of Manager Velisaratos, a schedule of practise games has been arranged with the other high schools of the bay district. As soon as the football season ends the interclass will be played and the best material in the four classes will be picked out. No coach has been engaged, so far, but before the season starts this matter will be attended to. On the whole, the season's prospects are very good.

Track

The track team has started, in a very crippled condition. The graduation of the members of the team who usually were good for points, has somewhat crippled the team. We have, however, some promising material. On Sept. 25, the fellows showing up the best in the Interclass will be picked for the team. The freshmen and sophomores show up fairly well and are coming out very readily. There are some good men in the junior and senior classes, but just now football is keeping them away from training.

One advantage this year's team will have is the new track at Jackson Park. It has already been opened and is in good condition. The oval is a little less than a quarter of a mile. There is a one-hundred twenty yard straight away. The track is eighteen feet wide, allowing room for all. The new clubhouse has two showers and a number of dressing rooms. With the privilege of using these and the good material in school, Captain Mangelsdorf and Manager Thorn, with the aid of a coach, hope to make this a winning season.

Girls' Athletics

Girls' Basketball

The basketball girls have a new court on which to begin this year's work, and with the aid of Miss Worthen, our new coach, the team should make good. New dressing rooms and shower baths have been installed in the barn near the court, which makes it more convenient for the girls.

Basketball practice takes place every day except Wednesday, and the Faculty practice is held on Tuesday. The members of the Faculty who have turned out so far are: Miss Worthen, touch center; Miss Wilson, guard; Miss Beeger, forward, and Miss Stewart, side center.

The girls' team will consist of nine members instead of seven, and as there are only two members of last year's team left—Miss Eleanor Hauerken, '13 (captain), and Miss Edith Holuber, '14 (manager)—it is up to the girls to come out and make the team.

Miss Carmen Bieber and Miss Matilda Felderman as forwards, and Miss Leona Goodman and Miss Allen as guards, are showing up well in practice.

The girls expect to play the Faculty before Christmas. The interclass will be held in October, but no definite date has been decided upon. The team will not play any outside games until after Christmas, as our coach is looking forward to putting out a "Class A" team.

Tennis

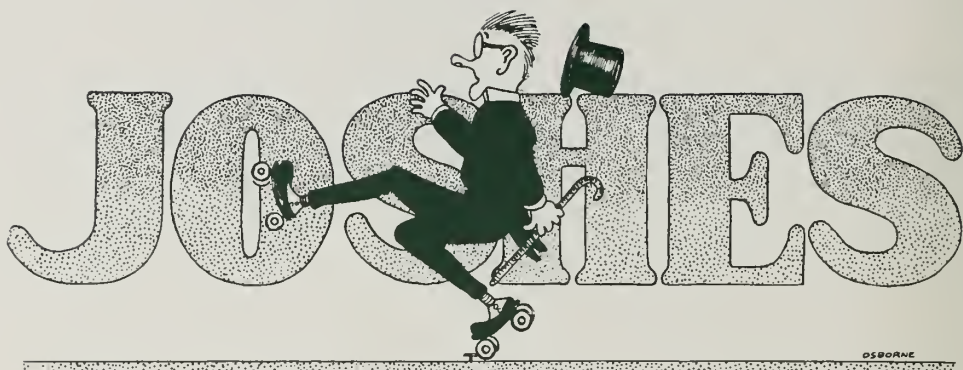
The Lux girls' tennis team has the use of the grounds at Jackson Park. These are first-class courts and they are doubly appreciated on account of the fact that there are none at Lick. Miss Worthen, our athletic instructor, is always willing to help the girls. Under these favorable conditions a good team will be easily picked. A large number of girls are turning out daily to practise. Miss Gerson and Miss Dinkelman, old-timers on the courts, are among this number. With their help, we look forward to a fine team and hope to succeed in carrying off the tennis honors for the school. Regular practise is under way and an interclass will be held on the third week in October for the purpose of choosing those who will represent us in the league.

Swimming

The girls have put aside every Wednesday afternoon for swimming, except the one devoted to the Rally. Under the supervision of "The Faculty Life Saving Crew," the girls are gradually learning to swim.

As the girls have never had an interclass, they are looking forward with interest to one before Christmas. Last Wednesday a race was held in the "Ladies' Tank" at Sutro Baths, and Miss De Roos and Miss Hauerken tied for first place. By the end of the year the girls will have a team qualified to compete with the winners of the boys' interclass.





STUDENT'S PRAYER.

Now I lay me down to rest,
To study hard I've tried my best;
If I should die before I wake,
I'll have no blame exams to take.

Oh Lord; this student's heart to ease,
Make not our teachers hard to please,
Let them all be sweet and happy,
And not inclined to be so snappy.

Make them all like Potts and Plumb,
Always happy, never glum.
But even these, when they give exes,
Give us questions which perplex us.

Now I lay me down to sleep,
All rolled up in a little heap.
If I should die before I wake,
I hope the folks will lay me straight.

Miss Beeger—Coleman, turn around and face forward.

Coleman—Aw, I was only looking at Rasmussen.

Miss Beeger—Well, Herr Coleman, if you don't like the scenery up in this direction, why, I'll—



Cupid—How clear the horizon is!

Miss A.—Yes, I just swept it with my eye.—Ex.

T. M. O. (teaching Freshmen their A B C's)—That's right; now what comes after G?

Freshie—Whizz!

Leona—Why do so many of the fellows that go to dances stag?
Carmen—Lack of doe, I suppose.—Ex.



Lillian D.—Have you heard to-day's gossip?

Eleanore H.—No.

Lillian D.—Then I guess there isn't any.—Ex.

NEEDED.

Seniors—An elastic hat-band.

Juniors—Respect.

Sophomores—Admiration.

Freshies—Sage counsel.

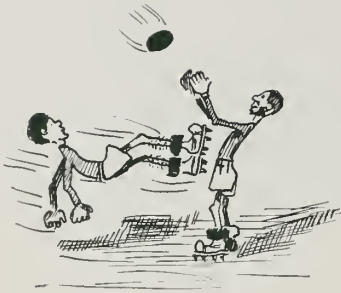


Weidenthal—Why do people make such a fuss over tennis?

Wills—Because they always have a racquet when they play it.

Miss Beeger—On what grounds do you object to examination?

Devine—Well, in the first place, it's a questionable practice.



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Do You Think
Their Mothers
Will Know
Them ?



OUR GLEE CLUB



SEEN AROUND
SCHOOL.

MORE DIXON.

Chief—Gee, but I'm thirsty!

Obliging Junior—I'll get you a glass of water, Mr. Dixon.

Chief (highly insulted)—Sir, I said thirsty, not dirty!



Miss Beeger—Wie Kommst du Herr?

Duckel—Nobody, I comb it myself.

OUR QUESTION DEPARTMENT.

(The "Tiger" has secured the services of Mme. Eppiemuringia Neuralgina Cak, the famous Polish coal-passer and Veterinary Surgeon (at a tremendous salary) to conduct our "Question Department" for the coming year. Mme. Cak will answer all questions from how to fry steak to revising tariff. Those desiring to take advantage of this splendid opportunity, address: Mme. Cak, care "Tiger" office, San Francisco.)

Mme. Cak:—(1.) Do you think long walks are necessary for the complexion? (2.) Where will the waistline be next season?

Lyda Ratlis.

(1.) It all depends on the distance to the nearest drug store. (2.) In all probability it will be somewhere between the neck and the ankles.

Dear Mme. Cak:—Is there any truth in the saying that only men of brains live long?

Wilhelm Crawley.

Don't worry, Wilhelm, you may prove one of the exceptions.

Miss Cak:—My wife persists in running up big bills. What shall I do?

Verne Jung.

Verne:—Better risk trouble with your creditors than your wife.

Dear Mme. Eppie Cak:—I have just been married and am in a quandary as to the proper way of addressing my father-in-law.

Nissie Hermann.

Nissie:—Call him "Mister," "Bill," "Mike," or anything else you like, until the time comes when it will be natural to address him as "Grandpa."

THE TIGER.

Dear Miss Cak:—I am very fond of flowers but as soon as I plant them my little dog tears them up. Glorence Ferson.

Glorence:—Plant your little dog first, then your flowers will grow much better.

Dear Mme. Cak:—When a gentleman knocks your best porcelain vase on the floor what is the proper thing to say to him? Meona Shouldwin.

Meona:—There are many things you might say, it all depends on the size of your vocabulary. If it was your husband—send a stamped, self-addressed envelope and I will tell you.

(These articles are fully protected by copyright, under the Pure Food and Drugs Act and are made in California.)



Mangels—Did you notice Hall is getting fat since he joined the Camera Club?

Coleman—I'll bite. Why?

Mangels—He's developing.



"Did you ever contribute to the Pacific Monthly?" asked Leona.

"Not monthly—daily," answered Boruck.

"Daily?" exclaimed Leona in surprise.

"Yes," said Boruck, sadly, "this summer when I crossed to the Islands."

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NEAR MARKET



Frank—Say, Ogilvie, is fish good brain food?

Ogilvie—Yea, bo, but in your case I wouldn't try anything smaller than a shark.

Richardson—I wish you to see that I don't stand on trifles.

Hardy (glancing at his feet)—No, I see you don't.

"Say, Chick, do you know where they grow shingles?"

"I'll bite, where?"

"Why, in the roof gardens, of course!"

E. F. RUSS
PRES.

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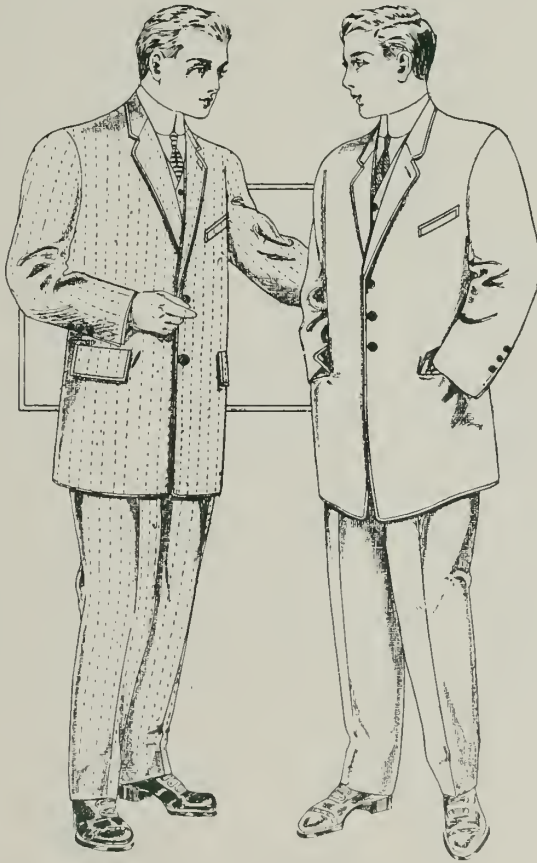
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Dinner—From hand to mouth.

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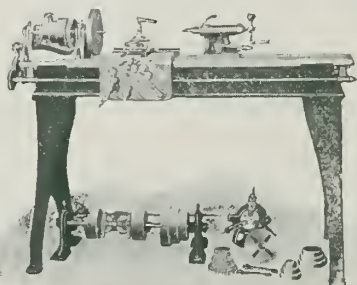
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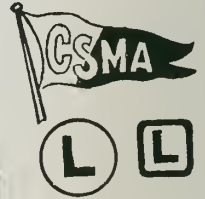
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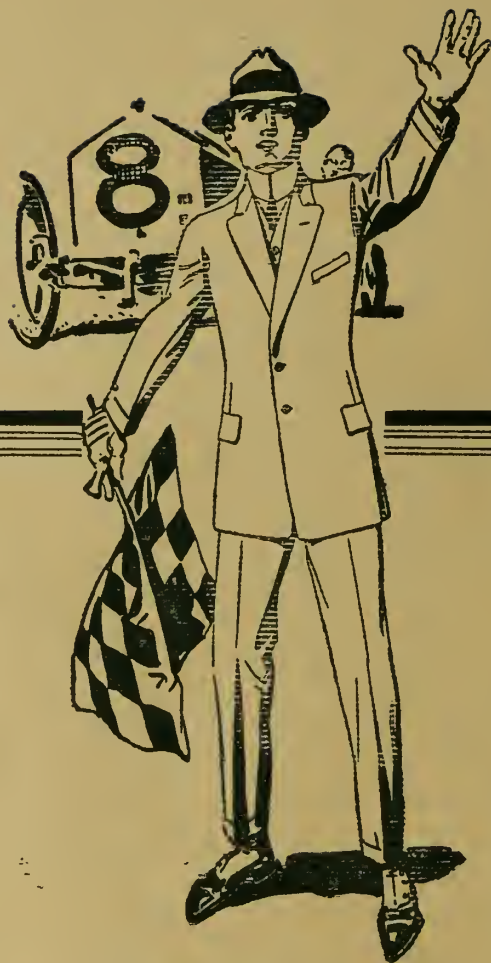
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